commerce.wi.gov

Wisconsin Department of Commerce

Safety & Buildings Division
201 West Washington Avenue
P.O. Box 2658
Madison, WI 53701-2658

Evaluation #

New Product # 20089010
Replaces Product # 200810-W
(Previously Replaced 200254-W)

Wisconsin Building Products Evaluation

Material	Steel Transfer Plated Column
Manufacturer	Jack Walters & Sons Corporation PO B 388, 6600 Midland Court Allenton, WI 53002

SCOPE OF EVALUATION

GENERAL: This report evaluates the Steel Transfer Plated (STP) Columns, manufactured by Jack Walters and Sons Corporation, assembled with *Woodclaw Truss Plate metal connectors, also manufactured by Jack Walters and Sons Corporation.

This review includes the cited **International Building Code (IBC)** requirements below in accordance with the current **Wisconsin Code** for commercial and multi-family dwellings**:**

- **Allowable Stress Design:** The 16- and 20-gauge Woodclaw metal truss plate connectors were evaluated for use within allowable design values in accordance with **s. IBC 2306.1** and **s. IBC 2308.10.10**.
- **Wood Columns:** The wood used as a component of the Steel Transfer Plated (STP) Columns is Southern Yellow Pine of Grade No. 2 or better, evaluated in accordance with **s. IBC 2303.1, 2303.1.1, 2304.11.2.7**, **2304.11.4.1** and **s. 602.4.1**.
- **Preservative-treated Wood:** Lower portions of the Steel Transfer Plated (STP) Columns are pressure-treated lumber in accordance with **s. IBC 2303.1.8** and shall be identified in accordance with **s. IBC 2303.1.8.1**.

DESCRIPTION AND USE

The Steel Transfer Plated Column is an assembly of three or four laminates of 2 x 6's, 2 x 8's, 2 x 10's or 2 x 12's of Southern Yellow Pine of grade No. 2 or better and metal connector plates. The column of sawn dimensional lumber is bonded together on the wide face using metal connector plates. Additionally, the lumber is spliced end-to-end with metal connector plates such that the lower portion is pressure- treated lumber, and the other end is untreated lumber. Pressure-treated lumber is attached to untreated lumber in staggered splices. The location of splices in a three-ply column is such that the second splice is 24 inches above the shortest treated member and the third splice is 48 inches above the shortest treated member. The spliced lumber is bonded together with 20 gauge G60 galvanized steel transfer plates:

- Exterior connector plates are 0.0362-inch thick galvanized plates that have a two tooth plug that is pressed into the wood parallel to the grain. Plug size is 3/16" x 1/2" resulting in each tooth embedding 1/4" into the wood. The rows of teeth are spaced vertically on the plate 2/3 of an inch. Each horizontal row has 1/4" of metal between the plugs. The plates have a wider band of metal along the vertical edges.
- Interior transfer plates are 0.0362-inch thick galvanized plates with similar steel specifications as the exterior plates except, the alternating rows of vertical teeth are bent in the opposite direction (2-way). The rows of teeth are spaced 3/8-inch vertically on the plate.

TESTS AND RESULTS

Static bending tests were conducted in accordance with the flexure portions of ASTM D198, "Static Tests of Timbers in Structural Sizes", except that rollers were not used at the reaction bearings or a load-bearing, and the surfaces of load-bearing blocks were not curved. Tests were done using a horizontal loading test rack consisting of a 4 foot wide reinforced concrete beam embedded in the laboratory floor with attachments as needed for specimen supports, loading and deflection measurement. All columns were loaded in a direction parallel to the wide face of each lamination. Tests were preformed by Alpine Structural Consultants, Test Report ASC#E0703013, October 24, 2007 in Earth City, MO.

The resulting design loads for each grade and column size are highlighted in bold as follows:

Lumber Size	Southern Yellow Pine Grade	Number of Plies	NDS Design Value F_b (psi)	NDS Design Value E (psi)	EP 559 Non-Spliced F_b (psi)	Test Result F_b (psi)	Test Result E (psi)	**Design Stress Used F_b (psi)**	**Design MOE Used E (psi)**
2 x 6	#2	3	1250	1.6×10^6	1690	1639	1.3×10^6	**1634**	**1.3×10^6**
2 x 6	#1	3	1650	1.7×10^6	2230	2029	1.52×10^6	**2029**	**1.52×10^6**
2 x 6	#2	4	1250	1.6×10^6	1750	1634	1.49×10^6	**1634**	**1.49×10^6**
2 x 6	#1	4	1650	1.7×10^6	2310	*1642*	1.53×10^6	**2029**	**1.53×10^6**
2 x 8	#1	3	1500	1.7×10^6	2030	1630	1.47×10^6	**1630**	**1.47×10^6**
2 x 8	#1	4	1500	1.7×10^6	2100	1839	1.63×10^6	**1839**	**1.63×10^6**
2 x 10	#1	3	1300	1.7×10^6	1760	2339	1.84×10^6	**1760**	**1.7×10^6**

NOTE:
1. The design values should not exceed the design values for unspliced limber of the same grade and configuration from EP559.

LIMITATIONS OF APPROVAL

The **IBC** limitations below are in accordance with the current **Wisconsin Amended ICC Code:**

- **Preservative-treated Wood:** In the preservative-treated portion of the column below grade, the transfer plates shall be in accordance with **s. IBC 2304.9.5**.

The Steel Transfer Plated Column can be used as an alternative to solid-sawn posts or other plied columns used in post-frame buildings.

The Steel Transfer Plated Columns are approved for use in Type V B construction.

The Steel Transfer Plated Columns are approved for use where Heavy Timber (HT) Type IV construction is used in accordance with **s. IBC 602.4** and **602.4.7**.

The Steel Transfer Plated Columns are approved for use in Types I, II, III and VA construction, in accordance with **s. IBC 603.1, Exception 16**.

NOTE: An additional thickness of lumber shall be applied to obtain the minimum nominal 6 x 8 (5 1/2" x 7 1/2" actual) size requirement for columns supporting roofs and nominal 8 x 8 (7 1/2" x 7 1/2" actual) size requirement for columns supporting floors.

Complete structural calculations shall be submitted for each project on a site-by-site basis when the Steel Transfer Plated Columns are used.

The column size and lumber grade needed shall be determined by the design load requirements of **Chapter 16**.

The metal connector plates shall be permanently marked for identification.

The treated lumber shall project at least 8-inches above exposed grade, and at least 1-inch above any concrete floor in contact with the column. The treated Southern Yellow Pine shall bear the appropriate American Lumber Standard Committee (ALSC) agency grade stamp.

All columns of this configuration and specification must bear a stamp stating Plated Columns Patent No. in a visible location.

The columns must be installed in accordance with the manufacturer's installation recommendations.

This approval will be valid through December 31, 2013, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The product approval is applicable to projects approved under the current edition of the applicable codes. This approval may be void for project approvals made under future applicable editions. The Wisconsin Building Product Evaluation number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Revision Date:
Approval Date: July 22, 2008 By: _____

Lee E. Finley, Jr.
Product & Material Review
Integrated Services Bureau

200810-W.doc